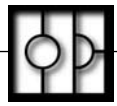

Research Article

Validity of a Self-Administered 3-Day Physical Activity Recall in Young Adults

Jennifer L. Han and Mary K. Dinger

ABSTRACT

Background: *Most physical activity recall questionnaires assess activity over a 7-day period. However, questionnaires have been validated in adolescents and adults using shorter recall timeframes.* ***Purpose:*** *The purpose of this study was to assess the validity of a self-administered 3-day physical activity recall instrument (3DR) in young adults.* ***Methods:*** *Thirty-nine participants (age: 21.0 ± 2.2 years; body mass index: 23.3 ± 3.3 kg/m^2) wore an accelerometer during all waking hours for seven consecutive days and completed the 3DR on the eighth day.* ***Results:*** *During the 3-day recall period, participants accumulated 283,488.1 ± 86,792.3 counts/day, 347.0 ± 102.5 counts/minute, and reported spending 23.3 (IQR = 35.0) and 11.7 (IQR = 43.3) minutes in moderate and vigorous intensity activity, respectively. Counts/day and counts/minute correlated with self-reported minutes of vigorous activity (r_s=0.40, p=0.01 for both variables).* ***Discussion:*** *Results indicate that the validity indices of the vigorous 3DR items are similar to other self-report physical activity questionnaires.* ***Translation to Health Education Practice:*** *Health education and promotion professionals should consider using the 3DR when evaluating physical activity interventions in college students and young adults.*

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BACKGROUND

Physical activity is associated with decreased risk of chronic diseases.[1-5] Participation in physical activity decreases with age, particularly during the transition from adolescence into young adulthood.[6,7] Health education and promotion professionals who develop and implement physical activity interventions among young adults need valid instruments to evaluate the effectiveness of their programs. Questionnaires are widely used to assess physical activity behavior because they are relatively inexpensive, convenient, simple to administer to large groups, and do not change the behavior under study.[8,9] There are three categories of questionnaires, including global surveys, quantitative history surveys, and recall surveys that each have their own advantages and disadvantages.[10] Whereas global surveys consist of few questions and are simple to administer, they do not provide information regarding daily physical activity and/or energy expenditure. On the other hand, quantitative history surveys provide extensive information regarding physical activity performed during the past year or longer, yet they are time-consuming and burdensome for the respondent. Recall surveys are a good compromise because they do not require much time to complete, yet many of them collect enough information to en-

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able calculation of physical activity and/or energy expenditure for different activities and intensities.

The timeframe of recall and the amount of information requested can vary considerably in recall surveys.[11-17] Two recall questionnaires that have been used among young adults, and specifically validated in college students, are the National College Health Risk Behavior Survey (NCHRBS)[18] and the 7-Day Physical Activity Recall (PAR).[16] Physical activity items from the NCHRBS ask respondents to report the frequency with which they engage in at least 30 minutes of moderate, 20 minutes of vigorous, and any strengthening and stretching activities during the past seven days.[18] This questionnaire is simple, but does not allow practitioners or researchers to quantify total physical activity or to determine if respondents are meeting the current physical activity recommendation.[19] The PAR asks respondents to record the duration of moderate, hard, and very hard activity during the morning, afternoon, and evening of the previous seven days.[16] Whereas the PAR estimates physical activity and/or energy expenditure fairly well at the group level, much variability exists at the individual level.[20]

Researchers have developed recall instruments that assess physical activity over shorter time periods in adults and adolescents. In adults, the 24-hour recall (24HR) was developed to save time and to minimize possible reporting error.[15] The 24HR inquires about frequency and duration of moderate and vigorous intensity activity. Among adolescents, a previous-day recall (PDPAR) and a 3-day physical activity recall (3DPAR) have been developed that ask individuals to record activities that they performed in 30 minute blocks.[17,21] The convergent validity of the 3DPAR was examined among 8th and 9th grade girls using an accelerometer, and validity indices were acceptable ($r = 0.27 – 0.51$, $p < 0.05$).[21]

PURPOSE

Recall instruments assessing a shorter time period may provide more accurate estimates of physical activity among adolescents and adults than instruments assessing longer timeframes. Whereas the single administration of a recall instrument assessing physical activity across a 3-day period appears to be a satisfactory assessment tool among youth, no such instrument is available for young adults. The purpose of this study was to assess the validity of the 3-Day Physical Activity Recall (3DR).

METHODS

Participant Recruitment and Study Design

Following approval by the institutional review board, students attending a large, public university in the south central United States were recruited to participate in this study through announcements to large general education classes. Eligible participants were male and female students between 18-30 years of age. Participants were excluded if they: (1) were pregnant, (2) were non-ambulatory, or (3) answered "Yes" to any questions on the Physical Activity Readiness Questionnaire (PAR-Q), a questionnaire designed to assess potential health-related risks when engaging in physical activity.[22] A power calculation was conducted before the study began to determine the necessary number of participants. The researchers reviewed the literature and determined that a Spearman correlation coefficient of 0.40 between the questionnaire scores and accelerometer-determined physical activity would be meaningful. According to Cohen,[23] at least 37 participants were needed (80% power, one-tailed test, alpha = 0.05).

Participants visited the lab twice. During the first visit, on a Tuesday, participants completed an informed consent and a short demographic questionnaire. Each participant's height was assessed using a stadiometer and weight was measured using a physician's balance beam scale to calculate Body Mass Index (BMI). Participants were then given an accelerometer, fitted to a waist belt, and were provided with verbal and written instructions for wearing the accelerometer. Participants were asked to wear the accelerometer over their right iliac crest during all waking hours for the next 7 days, with the exception of performing activities in water, and to continue with their normal activity. Participants were also asked to complete an accelerometer log that recorded the times that the accelerometer was put on and taken off, as well as any activities that were performed without the accelerometer being worn. On the 8th day, a Wednesday, participants returned to the laboratory to turn in the accelerometer and log and complete the 3DR, recalling all moderate, hard, and very hard activities performed the previous Sunday, Monday, and Tuesday. Written instructions were provided to define physical activity and activity intensities and to assist participants with completion of the instrument (Appendix A).

Data were collected in two cohorts due to the availability of eligible participants. There were 40 participants in the first cohort and 21 participants in the second cohort, for a total of 61 participants. Data collection was standardized for the two cohorts, with participants in both cohorts visiting the lab on a Tuesday, wearing the accelerometer Wednesday through Tuesday, and returning to the lab the following Wednesday. The data were collected January 31, 2006 through February 22, 2006.

Instruments

Three-Day Physical Activity Recall. The 3-Day Physical Activity Recall (3DR) was modeled on the PAR, which is typically administered by an interviewer.[16] The 3DR is a self-administered questionnaire that asks participants to recall moderate, hard, and very hard physical activity performed for at least 10 minutes in duration during the previous 3 days (Appendix A). Hard and very hard physical activities were combined to represent vigorous intensity activity. The days are divided into morning, afternoon, and evening time periods, and the time periods are defined as follows: morning refers to the time between getting out of bed and eating lunch; afternoon refers to the time between lunch and dinner; and evening refers to the time between dinner and going to bed. Sleep time was also recorded as time in and out of bed. Time spent engaging in moderate, vigorous, and moderate-to-vigorous

physical activity was computed for each of the 3 days recalled and was averaged across the 3-day time period.

Accelerometer. The ActiGraph GT1M (ActiGraph, Pensacola, FL) was used to objectively assess ambulatory physical activity. The GT1M is an updated version of ActiGraph Model 7164, which has documented validity and reliability with counts (the summation of the acceleration signals per cycle) significantly correlated with energy expenditure and relative oxygen consumption during ambulatory activity[24,25] and acceptable test-retest reliability (ICC = 0.80).[26]

The GT1M is a uniaxial accelerometer capable of storing more than 1 MB of data, measuring 5.1 x 5.3 x 2.0 cm, and weighing 42.5 g. The GT1M detects vertical accelerations ranging in magnitude from 0.05 to 2.0 *g*. The signal is digitized by a 12 bit analog-to-digital converter at a sampling rate of 30 samples per second and the digitized signal is then filtered so that signals within the frequency range of 0.25 to 2.5 Hz are recorded. The resulting counts are summed over a user-specified interval of time.[27]

Data Reduction and Analysis

One-minute cycles were used. Valid non-wear time consisted of bouts of at least 60 consecutive minutes of zero counts, with allowance for two consecutive minutes of counts between 1 and 100. After removing valid non-wear minutes, accelerometer wear time was determined by summing the remaining minutes.[28] The accelerometer compliance requirements, determined *a priori* by the researchers, were that participants must have at least 10 valid hours of wear per day on each of the 3 days of the questionnaire recall and on 4 or more days of the 7-day monitoring period.[28] Data from 22 participants were excluded because they did not meet the *a priori* accelerometer compliance requirements. Compliance was high among the 39 participants who met the criteria [13.6 (*SD* = 1.2) hours/day during the 3-day questionnaire recall period and 13.8 (*SD* = 1.0) hours/day on 6.6 (*SD* = 0.6) days during the 7 days of monitoring].

Several variables were computed from the accelerometer data to compare with the time variables from the 3DR. Counts/minute and total counts/day were calculated for both the 3-day questionnaire recall period and the 7 day monitoring period. Freedson et al.[24] cut-points were then used to categorize counts into intensity levels as follows: light, < 1952 counts/min, moderate, 1952 – 5724 counts/min, hard, 5725 - 9498 counts/min, and very hard, > 9498 counts/min. The hard and very hard categories were combined to form a vigorous intensity variable (> 5724

Appendix A. Instructions for Completing the 3-Day Physical Activity Recall

Below is a guide to help you complete each section of the questionnaire that is on the following page. Please be as honest and as accurate as you can.

1. Fill in today's date in the upper left corner.
2. Answer questions 1-4.
3. Record your sleep in the table by writing the times that you got into and out of bed (not the amount of time you were actually sleeping). Write down the following times for each day:
   - Tuesday - time you got in bed on Tuesday night, time you got out of bed on Wednesday morning
   - Monday - time you got in bed on Monday night, time you got out of bed on Tuesday morning
   - Sunday - time you got in bed on Sunday night, time you got out of bed on Monday morning
4. In the rest of the table, you will be recording the total amount of minutes that you were physically active for each of the following segments of the day. Begin with Tuesday and work backwards to Monday and then Sunday.
   - Morning - time between when you got out of bed and ate lunch
   - Afternoon - time between lunch and dinner
   - Evening - time between dinner and when you got into bed

Physical activity refers to any bodily movement that is performed by your skeletal muscles and requires energy, such as walking. Think about the physical activity that you did at work/school, around the house and yard, to get someplace, and for recreation and sport. Record only **moderate**, **hard**, and **very hard** physical activity that took **at least 10 minutes** to do.

- **Moderate** - physical activity that makes you feel similar to how you feel when you are walking at a normal pace or walking as if you were going somewhere
- **Very Hard** - physical activity that makes you feel similar to how you feel when you are running
- **Hard** - physical activity that falls in between moderate and very hard

Do **NOT** include light activities such as desk work, standing, bowling, strolling, and stop-and-go walking such as grocery or window shopping.

- Example: walked 8 minutes to class and 8 minutes back home = 0 minutes
- Example: walked 11 minutes to class and 11 minutes home = 22 minutes

5. Answer question 5 at the bottom of the sheet.

Continues on next page

Appendix A. The 3-Day Physical Activity Recall (continued)

Today's Date _____

THE 3-DAY RECALL

1. Were you employed in the last three days? No (Skip to Q#4) Yes
2. How many days of the last three did you work? _____ days
3. How many total hours did you work in the last three days? _____ hours last 3 days
4. What two days do you consider your weekend days? _____ & _____

Indicate total time spent being physically active for at least 10 min at a time

		Tuesday	Monday	Sunday
SLEEP	Time in Bed			
	Time out of Bed			
MORNING	Moderate			
	Hard			
	Very Hard			
AFTERNOON	Moderate			
	Hard			
	Very Hard			
EVENING	Moderate			
	Hard			
	Very Hard			

5. Compared to your physical activity over the past three months, was the last three days of physical activity more, less, or about the same?
a. More
b. Less
c. About the same

counts/min), and a moderate-to-vigorous intensity category was also created (≥ 1952 counts/min). These cut-points were selected because the moderate intensity category was calibrated to walking, which is the most common type of ambulatory activity.[29] Mean accumulated time spent engaging in moderate, vigorous, and moderate-to-vigorous physical activity, as well as time spent in physical

activity in bouts of at least 10 minutes in duration (with allowance for 2 minutes of interruption), were determined for the 3-day and 7-day periods.[28] In addition, the percentage of participants meeting physical activity recommendations as defined by accumulating in bouts of at least 10 minutes; either 30 minutes of moderate intensity activity on at least 5 days or 20 minutes of vigorous intensity activity on at least 3 days, or a combination of such activities during the 7-day accelerometer monitoring period were determined.[19] Independent t-tests and chi-square analyses were used to compare data from the two cohorts. Because the two cohorts did not differ in age ($p = 0.32$), sex ($p = 0.37$), race ($p = 0.83$), enrolled credit hours ($p = 0.47$), BMI ($p = 0.13$), counts/minute and total counts/day over the 3-day questionnaire recall period ($p = 0.13$ and $p = 0.11$, respectively), and counts/minute and total counts/day over the 7-day monitoring period ($p = 0.08$ and $p = 0.09$, respectively), they were combined for analyses. Descriptive statistics were calculated for all demographic and physical activity variables, and the distributions were examined. Paired t-tests were used to compare accelerometer variables from the 3-day questionnaire recall period and 7-day monitoring period. Because data from the 3DR were skewed according to Shapiro-Wilk tests for normality ($p > 0.05$), Spearman correlation coefficients were calculated to assess the associations between 3DR and accelerometer variables.

RESULTS

Participants

Participants were 21.0 ± 2.2 years of age. The majority were white (79.5%) and female (64.1%). During the 7-day monitoring period, accelerometer-derived data demonstrated that participants accumulated 42.1 ± 18.8 minutes of moderate-to-vigorous intensity physical activity throughout the day, but only 18.5 ± 15.2 minutes were performed in bouts of at least 10 minutes in duration. Demographic characteristics of the participants are presented in Table 1, and objectively measured and self-reported physical activity from the 3-day recall period are presented in Table 2.

Accelerometer-determined physical activity was compared between the 3-day recall and 7-day monitoring periods to determine if physical activity from 3 days was typical of activity for the week. There were no differences between the monitoring periods ($p > 0.05$; Table 3).

3DR and Accelerometer Variables

Associations of self-reported time from the questionnaire with accelerometer counts/minute and total counts/day dem-

Table 1. Characteristics of Participants (n=39)

Age (yr): M ± SD	21.0 ± 2.2
Weight (kg): M ± SD	67.2 ± 12.8
Height (cm): M ± SD	169.2 ± 7.9
BMI (kg/m^2): M ± SD	23.3 ± 3.3
Ethnicity: count (%)	
White	31 (79.5)
Other	8 (20.5)
Class: count (%)	
Underclassmen	11 (28.2)
Upperclassmen	28 (71.8)
Hours enrolled: M ± SD	14.4 ± 2.2
Employment: count (%)	
Employed	25 (64.1)
Unemployed	14 (35.9)
Meeting physical activity recommendation[a] count (%)	
Yes	5 (12.8)
No	34 (87.2)

Note: [a]Meeting the physical activity recommendation is defined as accumulating 30 min of moderate intensity physical activity in 10-min bouts on at least 5 days, 20 min of vigorous intensity activity in 10-min bouts on at least 3 days, or a combination of such activities during the monitoring period.

Table 2. 3-day Accelerometer and Self-Reported Physical Activity Variables (n=39)

Variable	Mean ± SD	Median (IQR)
Accelerometer:		
Counts/min	347.0 ± 102.5	304.1 (160.4)
Total counts/day	283,488.1 ± 86,792.3	269,114.0 (138,104.0)
Min/day moderate activity		
10-minute bouts	12.2 ± 11.6	11.0 (13.3)
Accumulated	36.8 ± 15.8	35.7 (16.0)
Min/day vigorous activity		
10-minute bouts	2.2 ± 5.0	0.0 (2.7)
Accumulated	3.3 ± 5.6	0.7 (5.7)
Min/day moderate-to-vigorous activity		
10-minute bouts	17.0 ±14.1	14.7 (16.3)
Accumulated	40.1 ± 17.2	37.3 (24.0)
Self-report:		
Min/day moderate activity	44.2 ± 47.7	26.7 (53.3)
Min/day vigorous activity	24.2 ± 38.7	11.7 (35.0)
Min/day moderate-to-vigorous activity	68.4 ± 64.1	40.0 (60.0)

onstrate correlations ranging from r_s = -0.06 to 0.40 (Table 4). The strongest relationships were between self-reported vigorous activity and counts/minute (r_s = 0.40, p = 0.01) and total counts/day (r_s = 0.40, p = 0.01) during the 3-day recall period.

Associations between self-reported time and accelerometer-derived time in bouts of at least 10 minutes at varying intensities ranged from a high of r_s = 0.28 (p = 0.08) to a low of r_s = -0.18 (p = 0.28; Table 4). Accelerometer-derived time in vigorous intensity activity and self-reported time in vigorous intensity activity demonstrated the strongest correlation, while all other associations were lower.

DISCUSSION

The purpose of this study was to assess the validity of the 3DR, a short, self-administered physical activity questionnaire, in a sample of young adults. Initial testing indicated that the 3DR elicited acceptable estimates of vigorous ambulatory physical activity during the 3-day recall period.

The 3DR demonstrated validity indices for vigorous intensity activity that are similar to those observed in other adult questionnaires.[30-32] Dinger and associates[30] demonstrated correlation coefficients of 0.47 between self-reported vigorous activity from the International Physical Activity Questionnaire (IPAQ) and both counts/day and daily minutes of vigorous activity measured by an ActiGraph 7164 accelerometer in a sample of college students. Hayden-Wade and colleagues[31] found similar associations between weekly minutes of physical activity from the PAR and from the TriTrac-R3D accelerometer in adults (r = 0.41). Richardson and colleagues[32] also observed similar correlations of MET-minutes/day between the hard and very hard activity categories from the PAR and the Caltrac accelerometer that ranged from -0.02 to 0.59 in adults.

The 3DPAR is a questionnaire designed for adolescents that assesses physical activity performed during the previous 3 days.[21] The 3DPAR is similar to the 3DR in that it

Table 3. Comparing 3- and 7-Days of Physical Activity Data from the Accelerometer, n = 39

	7-Day M ± SD	3-Day M ± SD	*p*
Counts/min	357.6 ± 105.2	347.0 ± 102.5	.25
Total counts/day	295,534.0 ± 89,200.6	283,488.1 ± 86,792.3	.15
Min/day moderate intensity activity in bouts	13.9 ± 14.0	12.2 ± 11.6	.09
Min/day vigorous intensity activity in bouts	2.5 ± 5.0	2.2 ± 5.0	.39
Min/day moderate-to-vigorous intensity activity in bouts	18.5 ± 15.2	17.0 ± 14.1	.24

Table 4. Spearman Correlation Coefficients for Associations between Recall and Accelerometer Variables (n=39)

Accelerometer Variables	3DPAR Variables		
	Vigorous min/day r_s	Moderate min/day r_s	Moderate-to-vigorous min/day r_s
Counts/min	.40*	-.06	.10
Total counts/day	.40*	-.06	.09
Min/day moderate intensity activity	-.05	.09	.09
Min/day vigorous intensity activity	.28	-.18	-.04
Min/day moderate-to-vigorous intensity activity	.10	.04	.08

* indicates p = .01

assesses two weekdays and a weekend day, and it asks about participation in moderate, hard, and very hard physical activities. Vigorous physical activity validity indices in the current study are consistent with those observed by Pate and colleagues[21] when they assessed the validity of the 3DPAR in adolescents. Pate and colleagues[21] found that self-reported total daily physical activity as defined by METs/day, as well as blocks of vigorous physical activity, significantly correlated with accelerometer-derived minutes of vigorous activity ($r = 0.36$ and $r = 0.41$, respectively). McMurray and associates[33] demonstrated lower validity indices between vigorous blocks of time from the 3DPAR and accelerometer-derived time spent in vigorous activity among adolescents ($r = 0.16$ to $r = 0.19$).

Participants provided better estimates of vigorous than moderate intensity activity on the 3DR, which is consistent with the literature.[9,30,31,34] Ainsworth and coworkers[34] observed the relationship between a telephone-administered questionnaire and accelerometer minutes of moderate and hard/very hard activity. They noted that correlations ranged from a low of $r_s = 0.03$ ($p > 0.05$) for moderate to a high of $r_s = 0.32$ ($p < 0.05$) corresponding to hard/very hard activity from both instruments. Overall higher correlations were observed when Dinger and associates[30] assessed the psychometric properties of the IPAQ. They found that self-reported vigorous activity demonstrated acceptable correlation to total weekly counts and daily minutes of moderate and vigorous activity from the accelerometer ($r_s = 0.39$ - 0.47, $p < 0.01$), while the associations between self-reported moderate activity ($r_s = 0.19$ - 0.23, $p < 0.05$) and walking ($r_s = 0.02$ - 0.10, $p > 0.05$) were lower. Hayden-Wade and colleagues[31] also demonstrated this trend by comparing weekly minutes at varying intensities between the PAR and the TriTrac R3D accelerometer, with correlation coefficients ranging from a low of $r = 0.33$ for the moderate category to a high of $r = 0.74$ for the very hard category. Sallis and Saelens[9] reviewed the psychometric properties of several questionnaires used among adults and concluded that subscales measuring vigorous activity had higher validity indices than those assessing moderate activity.

Variables from the 3DR were more strongly associated with accelerometer count variables (total counts/day and counts/minute) than with accelerometer intensity variables. This was expected since total counts/day and counts/minute are "pure" measures of physical activity that do not rely on regression model cutpoints. Because there are a variety of cutpoints that can be used to classify accelerometer counts into minutes of activity at certain intensities,[24,25,35] there can be large discrepancies in the summary minutes of moderate and/or vigorous intensity activity from an accelerometer depending on the cutpoints used.[36,37]

A 3-day recall timeframe was utilized for the 3DR because this timeframe was used successfully to assess adolescent physical activity.[21] In this study, accelerometer-determined physical activity did not differ between 3 and 7 days, indicating that a 3-day time period may represent weekly activity. One explanation for the lack of difference between the two time frames may be the inclusion of one weekend day in the 3DR. Several researchers have demonstrated that patterns of physical activity vary between weekdays and the weekend.[38-41] Inclusion of a weekend day in a shorter time period or using longer monitoring periods may compensate for the variability in activity.[40-42]

Strengths of this study include the use of an objective measure of physical activity to assess convergent validity of the 3DR and sufficient power to detect associations between the 3DR and accelerometer variables. Using a questionnaire that includes one weekend day and that asks respondents to report activity in bouts of at least 10 minutes are also strengths of the study because they provided a better estimate of habitual activity and allowed the researchers to determine if participants were meeting the current physical activity recommendation. Limitations of the current study include use of a convenience sample comprised primarily of Caucasian females, recall bias, and a waist-worn accelerometer that captured ambulatory physical activity only. It is possible that participants may have had difficulty distinguishing between intensity categories and accurately recalling the duration of moderate activities (e.g., walking to class). Furthermore, they may have engaged in activities that were reported on the 3DR but were not detected by the accelerometer because the activities were non-ambulatory.[43]

There are few questionnaires that assess the frequency and duration of physical activity in college students and young adults. The 3DR quantifies the frequency and duration of physical activity performed in 10-minute bouts, which is the minimum bout length that is recommended for health-promoting activity.[19] The 3DR reduces the respondent's burden with its short timeframe and the administrator's burden by eliminating the interview process. In conclusion, the 3DR is a short, self-administered questionnaire that can be used to assess physical activity in young adults. Validity coefficients for time spent in vigorous activity were comparable to those of other questionnaires. The questionnaire should be further evaluated in larger populations, and additional methods should be utilized to assess the psychometric properties of the 3DR.

TRANSLATION TO HEALTH EDUCATION PRACTICE

Physical inactivity is a major public health issue in this country. The majority of college students are either inactive or not active enough to improve or maintain their health status.[18,19,44] Health education and promotion professionals are developing and implementing physical activity interventions to combat this problem. During the evaluation process these specialists must employ valid instruments to assess the effectiveness of their programs.

Physical activity is a behavior that is extremely difficult to measure and there is no gold standard for assessing activity. Although more expensive techniques for quantifying activity exist (e.g. accelerometers), physical activity programs are often implemented by a limited number of professionals who con-

duct the programs on a shoestring budget. Therefore, questionnaires are commonly used to evaluate physical activity because they are inexpensive, convenient, and easily administered to large groups.

The instrument developed as a part of this study (3DR) requires participants to remember the frequency, duration, and intensity of physical activity performed in bouts of at least 10 minutes during the morning, afternoon, and evening of the previous 3 days. In this study, accelerometer-determined physical activity did not differ between 3 and 7 days, indicating that a 3-day time period may represent weekly activity. Therefore, practitioners and researchers can use the data obtained from the 3DR to determine time spent engaging in moderate, vigorous, and moderate-to-vigorous physical activity. The validity indices of the vigorous 3DR items are similar to other self-report physical activity questionnaires. Although additional evaluation of the 3DR is warranted, health education and promotion professionals should consider using the 3DR when evaluating physical activity interventions in college students and young adults.

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